

BSSB PULSE SHIFT SCENARIOS																														
Beam Destination	BSSB S#	BSSB State #	Description (25 Total)	Beam Permits												Beam Switches								Necessary (& Rltd) Events					Notes	
				LU	LD	NTF	MTA	BO	L3	BDS	MB	MI	RR	MU	P1	P2	SW	NM	MS	L	MTA	B	MB	R	MU	MI	SW	NM		
400 MeV Dump	L1	1	Linac 400 MeV Studies	1	1	0	x	x	x	x	x	x	x	x	x	x	x	x	1	1	x	x	x	x	x	x	x	x	11 0A	Linac Studies - non-HEP Pulse Shift
MTA	L2	2	MTA 400 MeV Studies	1	1	0	1	x	x	x	x	x	x	x	x	x	x	x	1	x	1	x	x	x	x	x	x	x	11 03 04	MTA Linac Studies - non-HEP Pulse Shift
			Booster Scenarios																											
Booster Dump	B1	10	Booster Studies	1	1	0	x	1	x	x	x	x	x	x	x	x	x	x	1	x	x	1	x	x	x	x	x	x	17	Beam to Booster Dump.
Booster Dump	B2	*	Booster Studies	1	1	0	x	1	1	0	x	x	x	x	x	x	x	x	1	x	x	1	x	x	x	x	x	x	13+14+15+16+19+1C+1D	Beam to Booster Dump.
MB TGT	B3	11	Protons B->MB	1	1	0	x	1	0	1	1	x	x	x	x	x	x	x	1	x	x	x	1	x	x	x	x	x	1D BF	Beam to MiniBooNE
			RR Scenarios																											
RR ABT	R1	20	Recycler Studies (\$E0)	1	1	0	x	1	0	1	x	x	1	x	x	x	x	x	1	x	x	x	x	1	x	x	x	x	E0 13+15+19+1C BE	Recycler study beam to RR Abort
RR ABT	R2	21	Recycler Tuneup (\$E1)	1	1	0	x	1	0	1	x	x	1	x	x	x	x	x	1	x	x	x	1	x	x	x	x	E1 15+1C BE /DE	Recycler Tuneup to RR Abort for \$29 & \$2B Study Beam	
RR ABT	R3	22	Recycler Tuneup (\$E2)	1	1	0	x	1	0	1	x	x	1	x	x	x	x	x	1	x	x	x	1	x	x	x	x	E2 13+15 BE /DE	Recycler Tuneup to RR Abort for \$20 & \$21 Beam	
RR ABT	R4	23	Recycler Tuneup (\$E3)	1	1	0	x	1	0	1	x	x	1	x	x	x	x	x	1	x	x	x	1	x	x	x	x	E3 19+15 BE /DE	Recycler Tuneup to RR Abort for \$2A Beam	
RR ABT	R5	24	Recycler Tuneup (\$E9)	1	1	0	x	1	0	1	x	x	1	x	x	x	x	x	1	x	x	x	1	x	x	x	x	E9 1C BE /93	Recycler Tuneup to RR Abort for 8 GeV Beam to Muon	
			MI Scenarios																											
MI ABT	M1	30	MI \$21 Cycle w/o RR tuneup	1	1	0	x	1	0	1	x	x	x	x	x	x	x	x	1	x	x	x	x	x	1	x	x	21 13+15 /E2 /30 BF	MI Tuneup to MI Abort for \$21 Beam without Recycler	
MI ABT	M2	31	MI \$20 Cycle w/o RR tuneup	1	1	0	x	1	0	1	x	x	x	x	x	x	x	x	1	x	x	x	x	x	1	x	x	20 13+15 /E2 /32 BF	MI Tuneup to MI Abort for \$20 Beam without Recycler	
MI ABT	M3	32	MI \$23 Cycle tuneup	1	1	0	x	1	0	1	x	x	x	x	x	x	x	x	1	x	x	x	x	x	1	x	x	23 19+15 /A5 BF	MI Tuneup to MI Abort for \$23 Beam	
MI ABT	M4	33	MI Studies Cycle with RR \$E3	1	1	0	x	1	0	1	x	1	1	x	x	x	x	x	1	x	x	x	x	x	1	x	x	(20+21+23+29+2A+2B+2D+2E) 19+15 E3 BE DE /A5	MI Studies to MI Abort with Recycler \$E3	
MI ABT	M5	34	MI \$2D Studies	1	1	0	x	1	0	1	x	x	x	x	x	x	x	x	1	x	x	x	x	x	1	x	x	2D 13+14+15+16+19+1C BF /E9 /93	MI Studies to MI Abort	
MI ABT	M6	35	MI Studies Cycle with RR \$E1	1	1	0	x	1	0	1	x	1	1	x	x	x	x	x	1	x	x	x	x	x	1	x	x	(20+21+23+29+2A+2B+2D+2E) 13+15+19+1C E1 BE DE	MI Studies to MI Abort with Recycler \$E1	
MI ABT	M6a	36	MI \$29 Studies w/o RR	1	1	0	x	1	0	1	x	x	x	x	x	x	x	x	1	x	x	x	x	x	1	x	x	29 13+14+15+16+19+1C BF /E1 /80	MI Studies to MI Abort	
MI ABT	M7a	38	MI \$2B Studies w/o RR	1	1	0	x	1	0	1	x	x	x	x	x	x	x	x	1	x	x	x	x	x	1	x	x	2B 13+15+19+1C BF /E1	MI Studies to MI Abort	
MI ABT	M8	39	MI \$2E Studies	1	1	0	x	1	0	1	x	x	x	x	x	x	x	x	1	x	x	x	x	x	1	x	x	2E 13+14+15+16+19+1C BF	MI Studies to MI Abort	
MI ABT	M9	40	MI Studies Cycle with RR \$E2	1	1	0	x	1	0	1	x	1	1	x	x	x	x	x	1	x	x	x	x	x	1	x	x	(20+21+23+29+2A+2B+2D+2E) 13+15 E2 BE DE /30 /32	MI Studies to MI Abort with Recycler \$E2	
			Muon Scenarios																											
Muon	MN1	50	8 GeV Protons to Muon via RR	1	1	0	x	1	0	1	x	x	1	1	1	1	x	x	1	x	x	x	x	x	1	x	x	E9 1C 93 BE	8 GeV Protons to Muon via Recycler	
Muon	MN2	51	8 GeV Protons to Muon via MI	1	1	0	x	1	0	1	x	1	1	1	1	x	x	x	1	x	x	x	x	x	1	x	x	2D 1C 93 BF	8 GeV Protons to Muon via MI	
Muon	MN3	52	120 GeV Protons to Muon	1	1	0	x	1	0	1	x	1	1	1	1	x	x	x	1	x	x	x	x	x	1	x	x	29 14 80 BF /E1	MI Ramped Protons to Muon	
			NuMI/NOvA Scenarios																											
NuMI TGT	N1	60	NuMI/NOvA Protons with RR	1	1	0	x	1	0	1	x	1	1	x	x	x	x	x	1	1	x	x	x	x	x	x	x	(2A) 15+19 A5 E3 BE DE	NOvA	
NuMI TGT	N2	61	NuMI/NOvA Protons w/o RR	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	1	x	x	x	x	x	x	x	23 15+19 A5 BF	NUMI	
			SWYD Scenarios																											
SWYD	S1	70	SWYD Protons with Long Flattop w/o RR	1	1	0	x	1	0	1	x	1	x	x	1	1	1	x	1	x	x	x	x	x	x	x	21 13 30 BF /E2	120GeV FT - Long Flattop without RR		
SWYD	S2	71	SWYD Protons with Short Flattop w/o RR	1	1	0	x	1	0	1	x	1	x	x	1	1	1	x	1	x	x	x	x	x	x	x	20 13 32 BF /E2	120GeV FT - Short Flattop without RR		
SWYD	S3	72	SWYD Protons with Long Flattop with RR	1	1	0	x	1	0	1	x	1	1	x	1	1	1	x	1	x	x	x	x	x	x	x	(21) 13 30 E2 BE DE	120GeV FT - Long Flattop with RR		
SWYD	S4	73	SWYD Protons with Short Flattop with RR	1	1	0	x																							